

ENTOMOLOGY.—*New species of syrphid flies in the National Museum.*¹ FRANK M. HULL, University of Mississippi (Communicated by ALAN STONE.)

This paper concludes a study of miscellaneous syrphid flies in the United States National Museum that was begun several years ago. Earlier reports upon this material have appeared in this JOURNAL. I wish to thank C. T. Greene and Dr. E. A. Chapin for many helpful courtesies and facilities in the study of these flies. The types are in the National Museum; paratypes where available are in the author's collection.

Mesogramma guttifera, n. sp.

Distinct in the pairs of oval spots upon the abdomen; the pattern suggests certain species of *Xanthandrus*.

Female.—Length 7 mm. *Head*: Vertex shining black; front for a trifle more than the median third shining blue-black, the sides bright yellow; frontal pile white, vertical pile black. Face and all but the posterior portion of cheeks pale yellow, white pilose, the former very short in profile; a very low tubercle lies at the point of greatest forward production. Antennae light brown, the third joint dark but reddish below at base. *Thorax*: Humeri, the lateral margins throughout, a complete marginal border upon the shining, brownish-black scutellum, the posterior half of the mesopleura and upper half of the sternopleura, all light yellow. Disk of mesonotum dull black with a broad, median vitta, which in some lights is light gray, in others bright steel-blue. There are on each side of this vitta three additional vittae, the middle one of which is much wider, suturally divided, and all three of which are margined at least narrowly with dark blue-black color. *Abdomen* narrowly oval, shining blackish marked with pairs of translucent, oval, yellow or light brown spots. First segment light yellow, black on posterior half. Second segment with a pair of oval yellowish spots, transverse, lying in the middle of each half of the segment, but broadly confluent with each other medially. Third segment, in the middle of each half, with a large subquadrate, but almost trapezoidal, slightly diagonal spot, the two well separated. Fourth segment with similar spots of almost the same

size, their corners barely more rounded. Fifth segment with similar but smaller and much more rounded oval spots. *Legs* yellow; the hind femora with a wide, subapical black annulus, their tibiae dark brown at base and apex, narrowly yellow in the middle, their tarsi blackish; other tarsi brownish. *Wings* hyaline; stigma dark brown.

Holotype, female (U.S.N.M. no. 56421), Guatemala City, IV, 10 (J. M. Aldrich).

Baccha amabilis, n. sp.

Somewhat similar to *flavipennis* Wiedemann, with narrower abdomen and fewer linear vittae.

Male.—Length 7 mm. *Head*: Vertex shining black. The front on upper third is opaque black viewed vertically, and at the eye margin at each lower angle of this triangle there is a small, punctate, white, hemispherical pubescent spot. The very swollen front is shining brown below, yellowish above the antennae. Face tuberculate, metallic black, with another white pubescent spot on each side at the upper eye margin. Antennae small, light brown, the third joint orange below; second joint nearly as long as third. *Thorax* very dark brown, with a pair of linear, widely separated, very obscure, gray or blue-black vittae; medially there is a pair of close, still more faint, brown-black vittae. Scutellum light brown, translucent, its pile and that of mesonotum erect, black, its basal fringe of five or six hairs pale. *Abdomen* moderately slender, parallel-sided from beyond the second segment, that segment constricted a little upon the basal half; color of abdomen light orange-brown, with darker vittae. Third to fifth segments with a pair of very narrowly separated (confluent upon the fifth segment) and narrow, medial vittae; these segments, on each side, with a pair of narrow, lateral vittae, each pair of which is confluent upon its posterior half, and whose outer section comprises the lateral margin itself. Second segment light brown with a small, rounded, yellowish, diffuse spot near the middle upon each side. Abdominal pile black, fairly long and abundant on the sides of the first segment. *Legs*: All the femora light yellow, except a wide subapical annulus upon the hinder pair; remainder of

¹ Received August 10, 1942.

first two pairs yellowish except the tarsi; their tarsi and remainder of hind legs blackish brown; all pile blackish; middle femora with a long fringe on the posterior surface. *Wings* light gray, very gradually becoming smoky brown on the basal third.

Holotype, male (U.S.N.M. no. 56422), Iquitos, Peru, March-April, 1931 (R. C. Shannon).

***Baccha nepenthe*, n. sp.**

Related distantly to *conopida* Phillipi. This species is characterized by the very slender, light colored, basal petiole of the abdomen, the broadly expanded black terminal part, and the slight dip in the third vein.

Male.—Length 10 mm. *Head*: Front, face and cheeks, and antennae reddish brown, the third antennal joint somewhat darker above. *Thorax*: Mesothorax black except upon the pleura, humeri, wide lateral margins, scutellum and an extensive area in front of the scutellum, all of which are reddish brown. Pile everywhere extremely short, thick, and pale. There is a median gray-pollinose vitta; also there is a transverse vitta, similar though fainter on each side on the anterior margin of the suture. *Abdomen* very spatulate, the second segment long and cylindrical and together with the narrow lateral corners of the first segment and the greatly compressed base of the third segment light orange-brown. Remainder of the expanded, flattened abdomen black and black pilose. *Legs* light reddish brown. *Wings*: Anterior margin brownish to the end of the stigmal cell, this cell a little darker and the brown color expanded centrally. Third longitudinal vein slightly curved near the middle, the subapical cross vein very sigmoid.

Holotype, male (U.S.N.M. no. 56423), Bonita, Fla., 5-20-1932 (A. R. Taylor). Ex *Dactylopius tomentosus*. Also one male and one female paratype in U.S.N.M. One paratype in author's collection.

***Baccha nymphaea*, n. sp.**

Related to *carlota* Curran; distinguished by the bicolored nonfasciate abdomen; lateral mesonotal margins continuously yellow almost to scutellum.

Female.—Length 11 mm. *Head*: Vertex and an annular ring before the antennae black.

Front, face, and cheeks yellow, the first tending to brown. Antennae elongate, the first two joints yellowish brown, the third joint black, narrowly reddish below, the arista light brown. *Thorax*: Mesonotum light ochraceous-brown with four black vittae, the medial pair chiefly confluent along their medial margins and diverging posteriorly and evanescent some distance from the scutellum. Between the black vittae there is golden pubescence. Scutellum and all of pleura subtranslucent pale yellow. *Abdomen* subtranslucent yellow to a little before the middle of the third segment and throughout most of the sides of the third segment. Remainder of abdomen brownish black with black pile. *Legs* yellow, the bases of the tibiae whitish yellow, the hind tarsi more brownish above. Pile yellow except upon the hind trochanters and medial surface of their coxae. *Wings* with the stigmal cell and both sides of the third longitudinal vein to a point about the middle of the stigmal cell light brown. Third longitudinal vein rather arcuate, the the subapical cross vein sigmoid.

Holotype, male (U.S.N.M. no. 56424), Campinas, São Paulo, Brazil (H. F. G. Sauer). One paratype, same data, in author's collection.

***Baccha eruptova*, n. sp.**

Related to *peruviana* Shannon but differing in the abdominal proportions and pattern.

Female.—Length 15 mm (abdomen 10 mm); wing 10.5 mm. *Head*: Vertex shining black with a bluish tinge. Upper half of the front, except narrowly along the sides, opaque black, lower half strongly shining blue-black; narrow sides of front for two-thirds of its height, linearly white pubescent and this pubescence discontinuous with that on the sides of the face. Frontal and upper facial pile black. Face tuberculate, metallic black, the sides yellowish and white pubescent; cheeks black. Antennae black, of normal shape, the inner end of second joint a little produced. *Thorax* brown-black, obscurely shining, with a pair of slender, widely separated, very obscure, dark brown pollinose vittae. Scutellum dark brown, shining, its pile and that of mesonotum black and short; its fringe in part black, rather long, of thirty or more bristles. Squamae and fringe dark brown. *Abdomen* elongate, the second and sixth segments of about equal length, the former as wide apically

as the latter at base; third to fifth segments of slightly decreasing length, the third four-fifths as long as second, and about twice as wide at its apex as at the narrowest width of the second segment; last segment cylindrical at base and strongly compressed laterally at apex. Color of abdomen shining blackish to dark mahogany, the basal corners of the second and third segments light mahogany, and on the second this color extends two-thirds of the length of the segment along its sides. There is a narrow-pronged, opaque triangle (black in oblique view) in the middle of the second segment, and a wider shorter one upon the third segment. Abdominal pile black, abundant and rather long on the sides of the first segment. *Legs* dark brown, the hinder pair black as far as the middle of the basitarsal joint, yellowish white and similarly pilose upon the terminal portion; elsewhere the legs are black pilose. *Wings* brown on the basal two-fifths as far as anterior cross vein.

Holotype, female (U.S.N.M. no. 56425), Iquitos, Peru, March–April 1931 (R. C. Shannon).

***Volucella brunnigaster*, n. sp.**

Somewhat similar in general appearance to *mellea* Jaen., but distinguished by the scutellar depression and numerous other differences.

Male.—Length 12 mm. *Head*: Front, face, and cheeks reddish orange-brown, rather deep, the low tubercle with long black pile. The sides of the face with reddish-golden pubescence, a few similar hairs and a few long hairs above. Antennae orange-brown, the third joint twice as long as basal width, the arista with 15 dorsal rays. *Thorax* shining black with a golden cast, the sides dark brown, the bristles black, the pile thick, short, yellowish, among which are numerous very long and slender black hairs; no prescutellar bristles. Scutellum brown with rugose transverse depression and six pairs of black marginal bristles. Scutellar pile, except in the corners, black. *Abdomen* translucent, orange-brown, with some black upon the first two segments. The first segment, except the sides, and a medial, narrow and posteriorly attenuated vitta on the second segment black. Pile of abdomen widely black upon the posterior half of the third and fourth segments and narrowly toward the sides on the posterior margin of the second segment, otherwise golden.

Legs black. The apices of the femora, the wide base of all the tibiae, and their apices narrowly reddish brown. Tarsi brown, becoming blackish upon their distal joints. *Wings*: Veins margined with brown, the central cross veins a little darker and an obscure spot at the end of the subcosta. Marginal cell very widely opened.

Holotype, male (U.S.N.M. no. 51351), Meta District, Colombia, B. Guevara collector, 1932. One paratype, same data, in author's collection.

***Volucella viridigaster*, n. sp.**

Related to *verdigaster*, n. sp., but with less extensive vittae and fascia upon the abdomen and the wing veins not conspicuously margined.

Male.—Length 11 mm. *Head*: Front, face, and cheeks pale whitish yellow. There is a pale, diffuse, brownish vitta separating face and cheeks and one down the middle of the deep-conical face. The low tubercle is densely short black pilose, the front longer black pilose, the sides of the face white pilose and pubescent. Antennae orange, the third joint two and one-half times as long as the basal width. *Thorax*: Mesonotum black, the sides light brownish yellow, the bristles black, the scutellum sub-translucent brownish yellow with five pairs of black bristles, a shallow preapical depression and black pile. Pile of thorax chiefly black with considerable whitish pile anteriorly. There are no prescutellar bristles. Squamae light yellow with brown fringe. *Abdomen* pale green translucent: the middle of the first segment, a narrow medial expanding vitta on the second segment black and confluent with a linear, black posterior border; the black border evanescent laterally; a similar evanescent black border on the third segment. Pile of abdomen black, short, dense, and appressed except over the basal portion of each segment. *Legs* black, the apices of the femora, the bases of the tibiae and the basal tarsal joints dark brown. *Wings* pale brown, cross veins clouded, the marginal cell widely opened.

Holotype, male (U.S.N.M. no. 51350), Ecuador, F. Campos R. A paratype, same data, in author's collection.

***Volucella verdigaster*, n. sp.**

Related to *inconsistens* Curran, but with wide black median vittae on the abdomen as well as fasciae.

Male.—Length 12 mm. *Head*: Middle of front black, the sides of front and face pale yellow. The cheeks and broad middle of the face black. Face deep conical, the pile thick over the tubercle and chiefly black with some shorter pile mixed with longer black hair on the sides. Antennae dark brown, the third joint twice as long as basal width, the arista with 27 dorsal rays. *Thorax*: Mesonotum black with a bluish and violaceous tinge, the humeri, a presutural and prenopleural, besides a pair of prescutellar spots and a pair of elongate spots almost adjacent to the postcalli, all light yellow. Thoracic bristles and pile black except for some short white pile upon the yellow spots and in the midline anteriorly. No prescutellar bristles. Scutellum dark brown with transverse rugose depressions and five pairs of long black bristles. *Abdomen* black with large, subrectangular, apple-green translucent spots in the lateral corners of the second segment, and more irregular spots in the lateral corners of the third and fourth which extend posteriorly to cover the entire lateral margin. Pile very dense, rather long, nearly erect, and black except upon the pale areas, where it is whitish. *Legs* black and black pilose. *Wings* hyaline, strongly clouded with brown along all of the cross veins and the distal portions of the second, third and fourth longitudinal veins; marginal cell widely opened.

Holotype, male (U.S.N.M. no. 51354), and one paratype, Bogotá, Colombia, B. Guevara collector, in U. S. National Museum; one paratype, same data, in author's collection.

Volucella flavogaster, n. sp.

This species suggests *zonaria* Linnaeus, of Europe. It is characterized by the linear black fascia of the abdomen and other markings.

Male.—Length 14 mm. *Head*: Entire face except for a pale, diffuse vitta separating face and cheeks bright yellow, golden pilose. The eyes of the male instead of being holoptic are merely approximated. Antennae orange, the third joint short, one and one-half times as long as basal width, the dorsal margin concave. The long arista has 26 dorsal rays. Ocellar pile orange. *Thorax*: Mesonotum orange-brown with a sublateral black vitta broken at the suture, and on the posterior area of the dorsum a pair of submedial anterolaterally attenuated

blackish spots. There are 9 or 10 prominent, black, prescutellar bristles, and all the lateral bristles are black. Scutellum orange-brown, swollen, with four pairs of black bristles. Squamae and fringe yellow. *Abdomen* orange-yellow marked with black as follows: Whole of the first segment, a basal fascia on the second expanded in the middle into a vitta that connects with a very narrow line at posterior margin; laterally this posterior marginal line is confluent with a transverse, narrow fascia occupying the lateral fourth of the segment just beyond the middle. Third segment with a narrow, basally attenuated, medial black vitta, a still narrower, posterior, black marginal marking, which is confined to the margin and not connected with the narrower transverse fascia. Fourth segment similar except that the marking along posterior margin is absent and the transverse fascia now occupies the middle of the long convex segment. *Legs* light yellow, the femora somewhat more brownish, their pile blackish on the lateral surfaces; elsewhere the pile is golden. *Wings* strongly tinged with yellow, the posterior margin pale brown, the marginal cell closed and stalked, it and the cell behind it light brown.

Holotype, female (U.S.N.M. no. 51356), Chinkiang, China, May 1923. A paratype, same data, in author's collection; also two paratypes from Nanking, China, one in the Vienna Museum, one in author's collection.

This is a very pretty species, and I have not been able to identify it with any Asiatic species known to me.

Graptomyza globigaster, n. sp.

This species suggests *flavorhyncha* Hull in the pattern of its abdomen; the fasciae are not medially expanded, however, and the face is short.

Female.—Length 6 mm. *Head*: Front, face, and cheeks pale yellow, marked with black; a narrow medial black stripe on the front and brownish down the middle of the face, darker between face and cheeks. Four or five blackish hairs on the tubercle and a few shorter ones below. Antennae elongate, orange, the third joint grayish above and three and one-half times as long as wide. The arista is nonplumose. *Thorax*: Mesonotum broadly black, the humeri, propleura, most of the mesopleura pos-

teriorly, the wide lateral margins of the mesonotum and the area before the scutellum, all pale yellow. Scutellum dark brown, blackish over the broad central concavity. Thoracic and scutellar bristles black, the short pile yellow. *Abdomen* oval-globose, subtranslucent, orange-brown marked with black as follows: a black fascia lying on the posterior portion of the second segment attenuated medially and medially indented behind and withdrawn from the margin; this fascia is continuous with an abruptly diagonal and slender, sublateral black vitta on each side of the third segment, which extends to the posterior corner and leaves the anterior corner pale. The posterior portion of the third segment is marked with a similar diverging black fascia, which, however, is broadly interrupted medially but also attenuated; laterally it connects narrowly with a wider and similar sublateral vitta. Fourth segment with a long, median vitta and a pair of sublateral, shorter, more posterior black vittae; these black vittae are wide and anteriorly rounded and none of them reaches the basal margin. *Legs* pale yellow, the apical fourth of the hind femora and all of hind tibiae black and chiefly black pilose, elsewhere the pile is pale. *Wings* hyaline with a pair of pale, slightly oblique, brownish fasciae beginning at the ends of the first and second longitudinal veins. The first of these bands reaches the base of the lower cross vein, the second reaches and follows the subapical cross vein. There is a small brown spot at the end of the subcostal vein.

Holotype, female (U.S.N.M. no. 52904), and 2 paratype females in U. S. National Museum, Island of Biliran, Philippines, C. F. Baker, collector. Paratype, same data, in author's collection.

***Brachypalpus trilineata*, n. sp.**

Differing from any described species in the narrow, pale fascia of the abdomen.

Female—Length 14 mm. *Head*: Front and

vertex shining black, the sides of the former narrowly yellow pubescent, all pile except a few black hairs at ocelli and above the antennae, yellowish. The prominent face is bare, dull and very dark mahogany, the cheeks shining black. Face with a very large, low, long tubercle, and a quite wide, thickly golden pubescent stripe reaching from eye to epistoma and continued broadly up the sides of the face to unite below the antennae. Antennae short, black, the third joint almost circular in outline. *Thorax* rather light brownish pollinose with rather obscure, broad vittae. Pleura thickly covered with ochre-colored pollen. The abundant pile of pleura and mesonotum is ochraceous, except for a few long, erect, black hairs on the posterior third of the mesonotum. Scutellum shining black, long, yellow-pilose, with a copious ventral fringe. *Abdomen* very broad and flat, with nearly parallel sides, a little wider in the middle of the abdomen. Abdomen dully shining black, marked with yellow to brown fascia. First segment light brownish basally. Second segment with a transverse, yellow-brown, basomedially indented, parallel-sided fascia near the middle running almost to the lateral margin. Third and fourth segments each with a subbasal, narrower, parallel-sided, light-yellow and yellow-pollinose fascia reaching the lateral margin; the fascia upon the fourth segment is slightly arcuate, especially toward the sides. Abdominal pile rather short, appressed and black except upon the first segment and the sides of the base of the second segment. *Legs*: Femora black; all the tibiae and tarsi except their distal joints, light orange. *Wings* light brown, the stigmal cell no darker, the stigmal cross vein heavy. The small cross vein is located four-fifths of the length of the discal cell from its base.

Holotype, female (U.S.N.M. no. 56426), Tjibodas, Mount Gede, Java, 4.09, Bryant and Palmer, collectors.